



Beyond electrification.

Innovative models of scientific publication

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Overview

-  **Context: an 'Open' perspective on electronic publishing**
-  **The information cycle: conventional ...**
-  **... electrified ...**
-  **... and digital perspective**
-  **What tools and standards are needed?**
-  **Where to expect/seek innovation?**
-  **Conclusion: some remarks regarding the context of 'technical' decisions**



GAP and Open Access

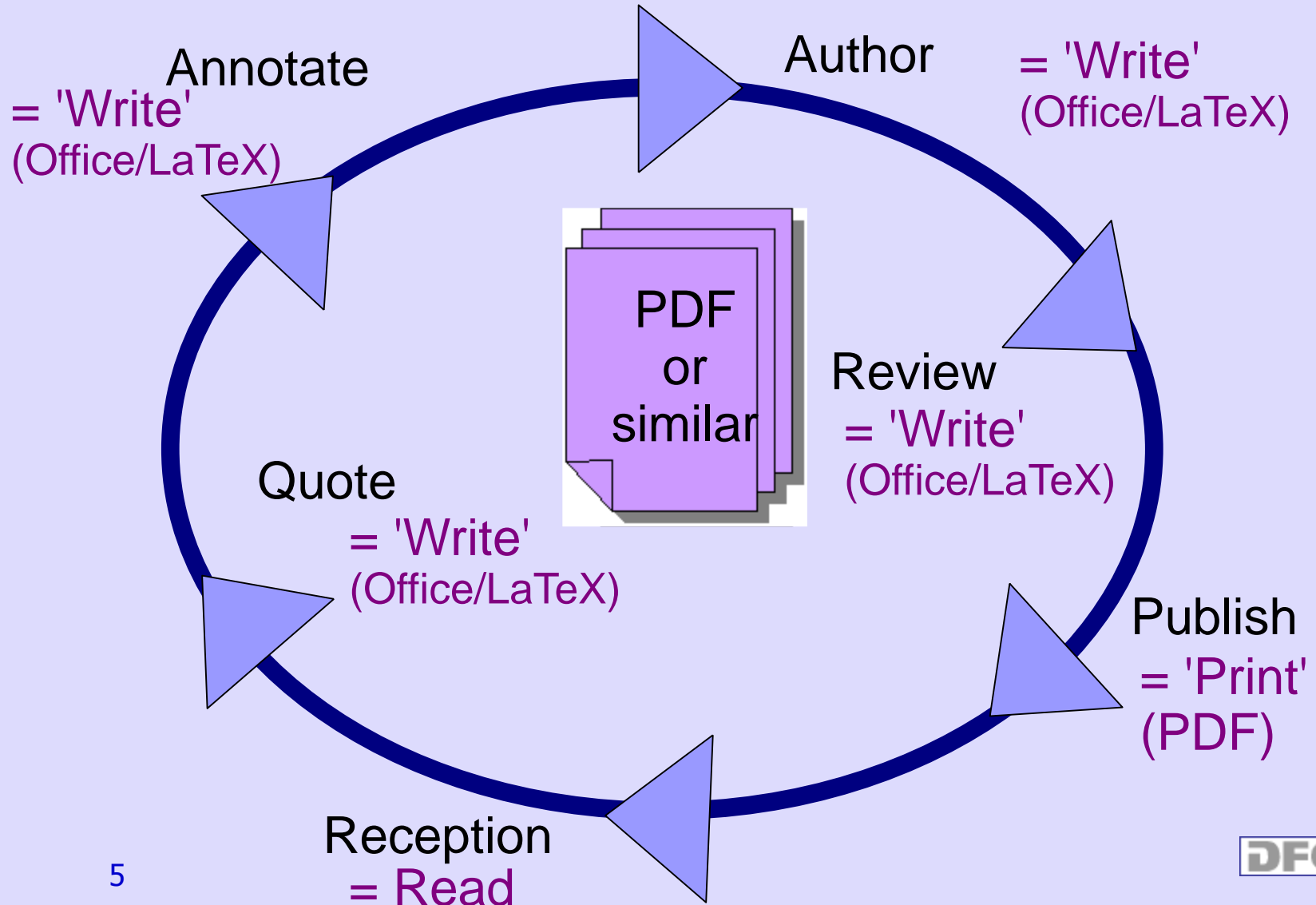
-  **Overall objective of German Academic Publishers: stimulate and support scientific communication and return science to scientists.**
-  Build an open co-operation framework for federating academic initiatives for electronic publication in Open Access models
-  Contribute to setting up innovative models for **'publication', assuring quality and impact assessment of scientific content**
-  Shared/distributed **technical facilities**, e. g.
 -  **Shared WWW-based workflow**
 -  **Supporting tools for open, standard based object modelling**
 -  **Generic authentication layer** pluggable in SSO architectures
-  And thus with a specific stress on technical aspects of 'openness' that have a potential of being relevant for non-OA players, too.



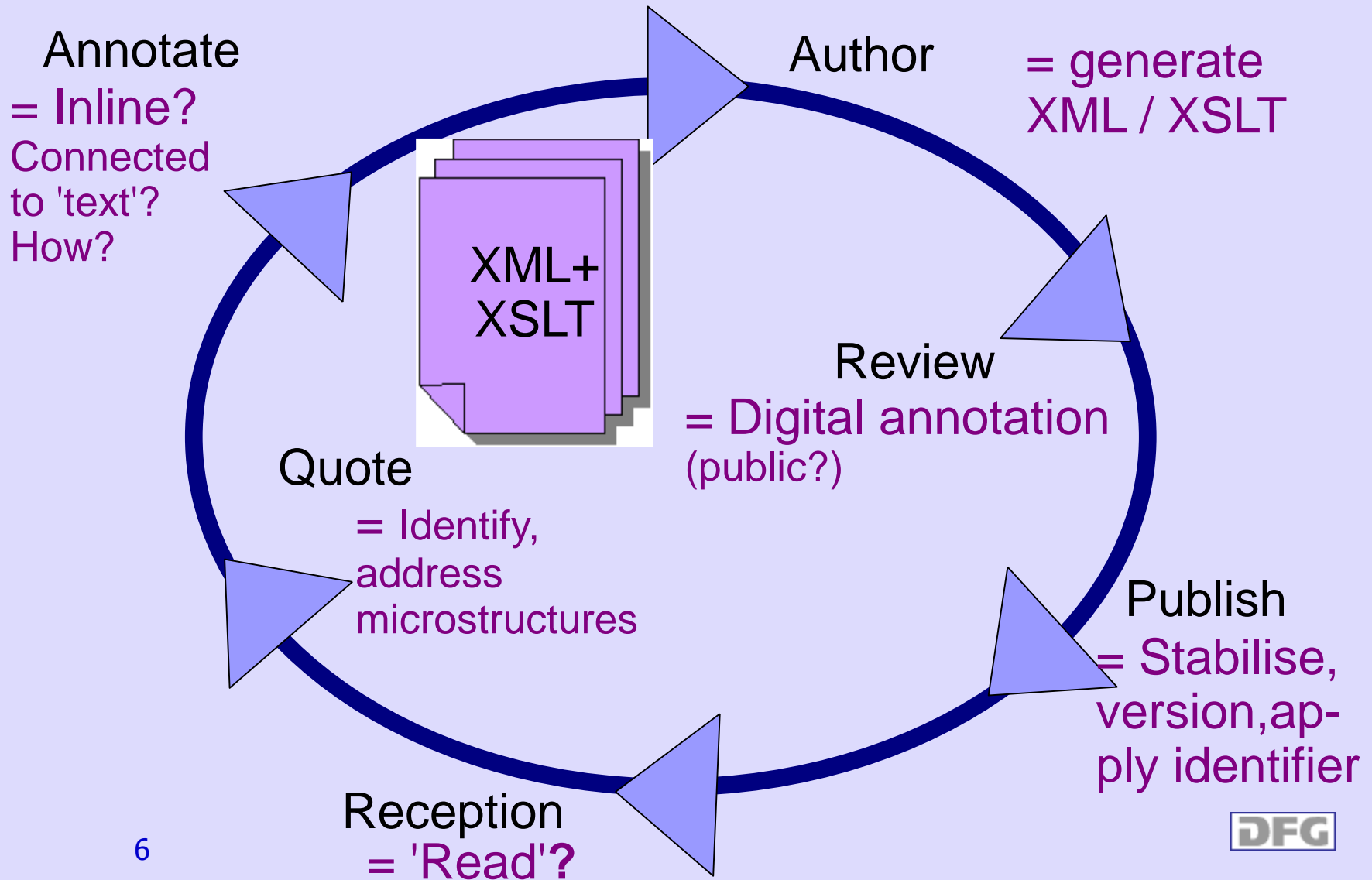
Information Cycle: conventional perspective



Information Cycle: electrified



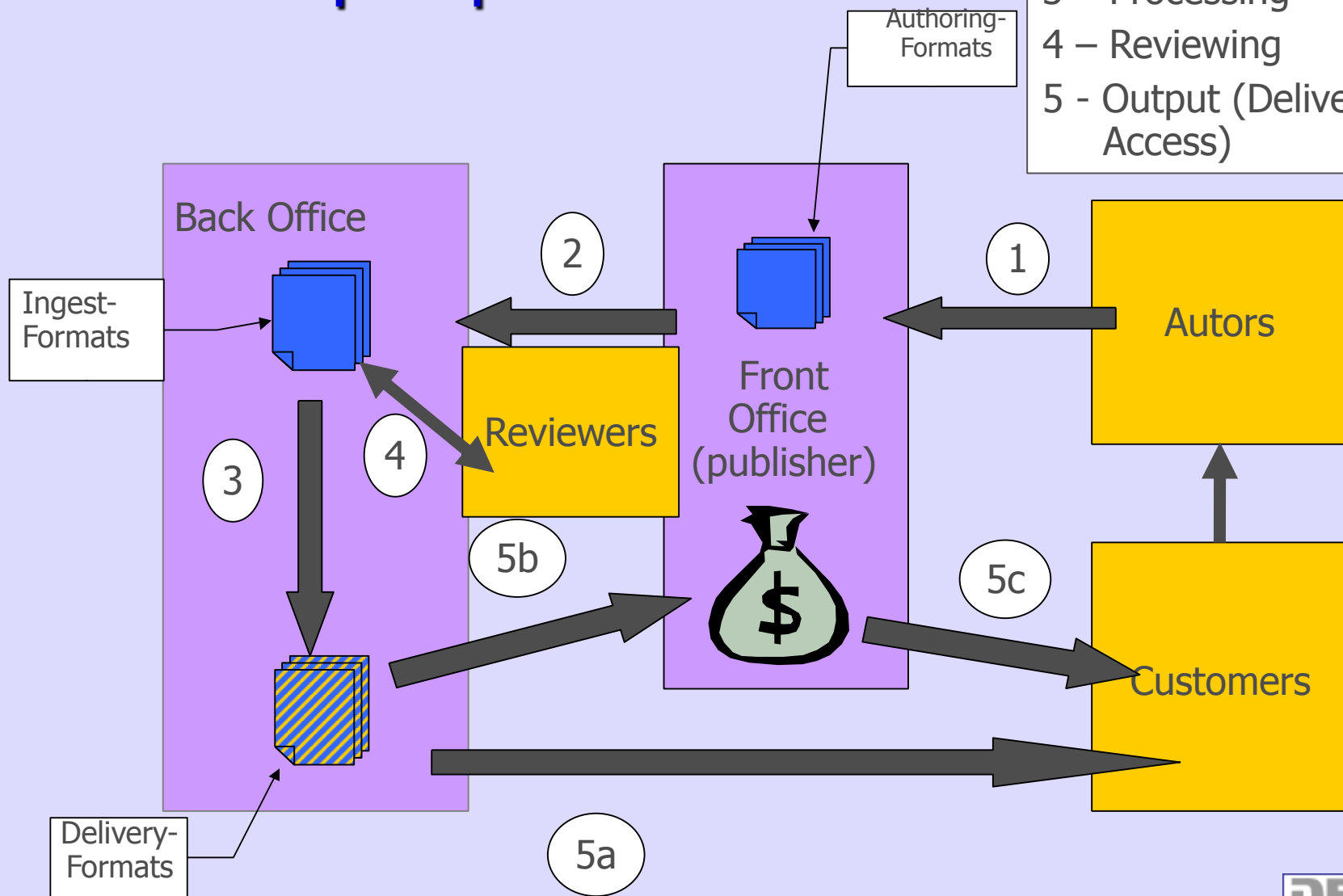
Information Cycle: digital





Processes: birds perspective






- 1 – Proposal
- 2 – Submission
- 3 – Processing
- 4 – Reviewing
- 5 - Output (Delivery / Access)





G A P

Functions, Tools and Standards

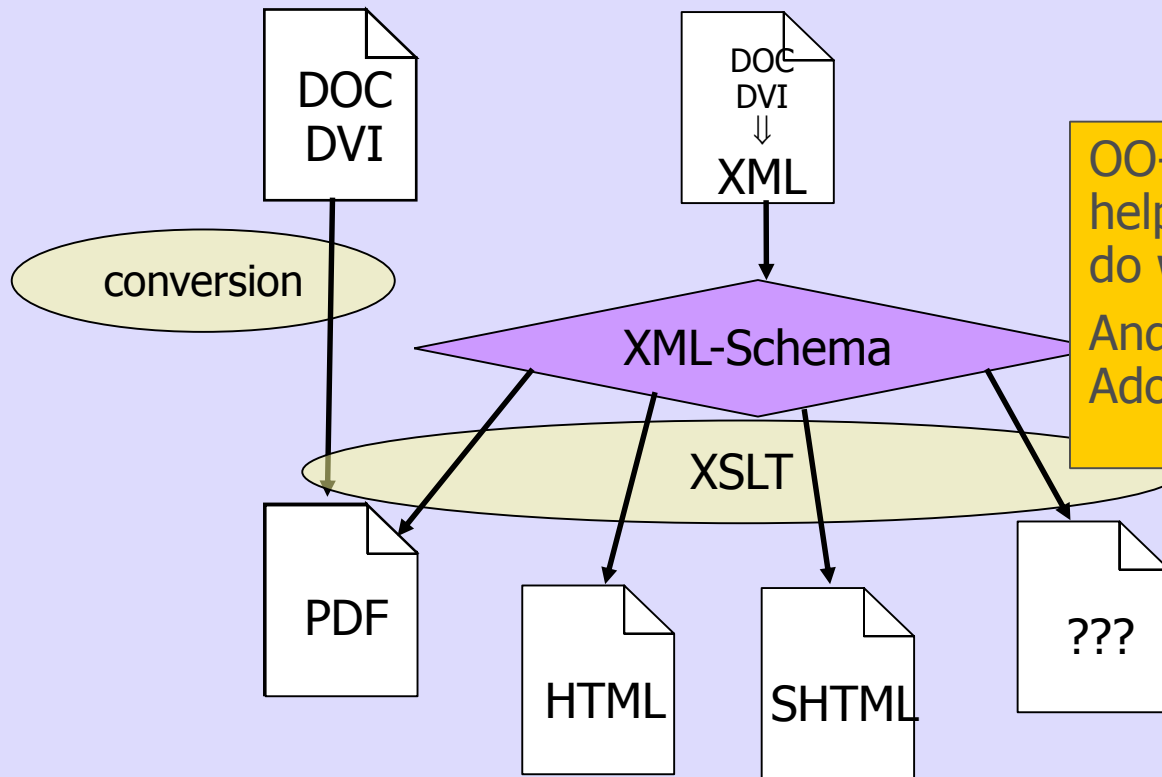
-  Metadata Models (DC)
-  Metadata Publishing + Exposure (OAI)
-  Standard based Document Models
-  Methods for Document Identification and Referencing
-  Components for Authentication and Authorisation



Dokument Modelling

,electrified'
Publishing

,genuine' e-publishing

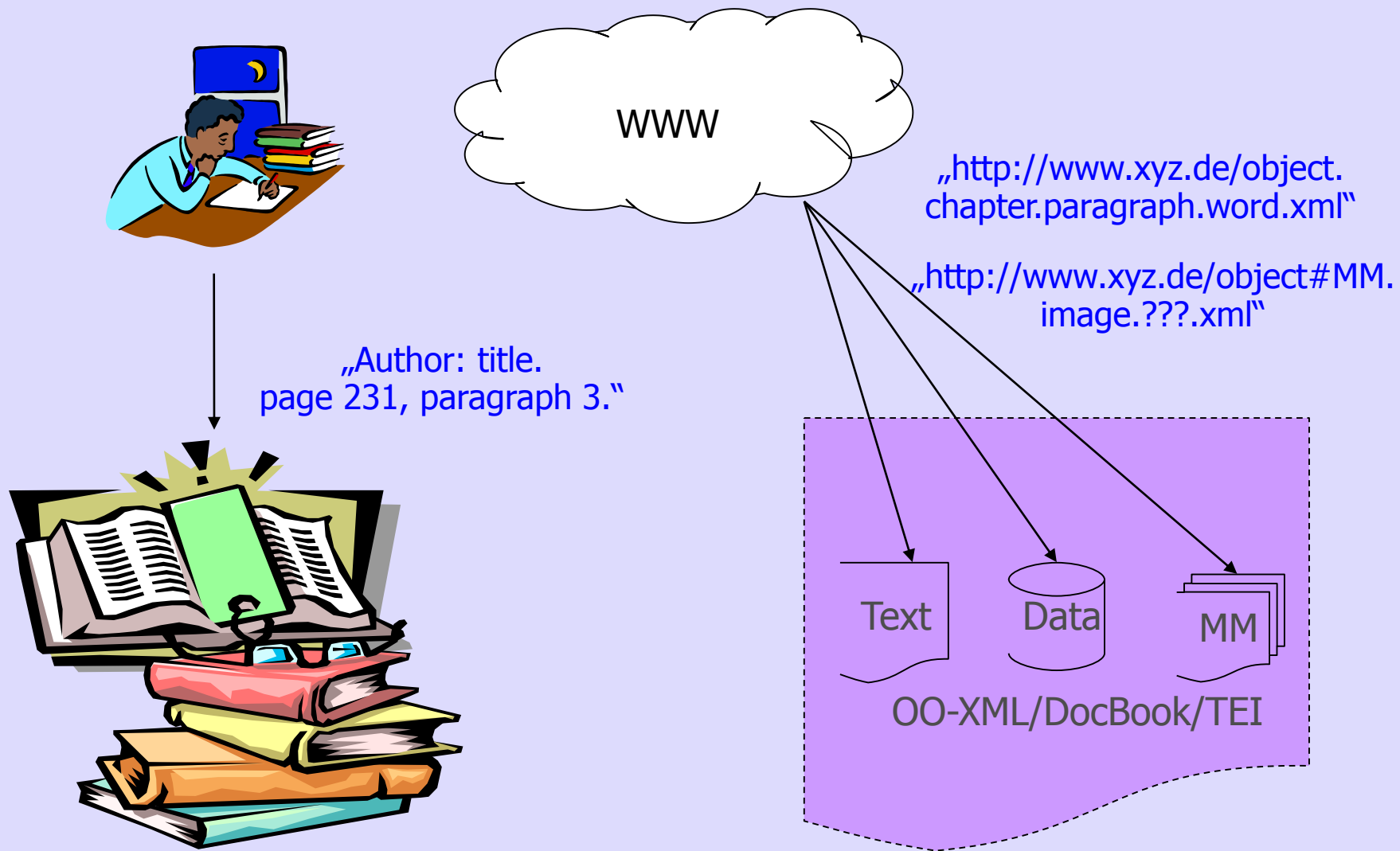


OO-XML and DocBook may help, **but**: which object scope do we have in mind?
And what do M\$-Office and Adobe offer on the long run?

- Basic question: Top-down-Modelling (TEI-like) vs. 'atomistic' Modelling making use of sophisticated rule system on top?








Quoting: ‚pointers‘ towards objects and specific parts










Identifying Documents

-  XML-based document technology needs URIs
-  URLs probably are not a sufficient solution (namely with respect to long term availability: a non-persistent reference is scientifically worthless!)
-  XLink & related standards could be relevant, but have not yet been truly established
-  URNs could be an appropriate solution – provided long term resolving instances are guaranteed
-  **Beware** of constructs such as „10.1786/123456789012“ (DOI) ... – not only for pragmatic reasons!








Authentication & Authorisation

-  **WHO** – e. g. authors, customers, editors, reviewers, staff ...
-  **May apply which kind of OPERATION** - e. g. 'read', 'write' (mind multi-authored settings!), annotate, stabilise ('freeze'), copy, change status to 'rejected' or 'fit for public reviewing'
-  **To which OBJECT** (or which specific **part** of such an object) - e. g. whole document ID, but microstructures within complex uniform objects ('book'-like) or compound multi-media objects
-  **and in which CONTEXT** are these operations permitted - e. g. *'for scientific use'* vs. *'for commercial use'* (§§!!), *pre-publishing*, *public reviewing*, *'publication'* etc.
-  In other words: identify **Actors**, **Entities**, **Operations**, **Context** and organise these in a **4-dimensional matrix** in a **secure**, **reliable** way using available components and **standards** wherever possible.



Methods of Authentication and Authorisation

M\$.NET / AD






-  (partly) proprietary (~LDAP?)
-  Centralised
-  Controlled by vendor (M\$)
-  Clear potential of being unsecure
-  No Authorisation Framework

Shibboleth / Liberty Alliance

- Based on open standards (LDAP/Internet 2)
- Distributed
- Can be controlled by user community (?)
- Secure??
- Integrated Authorisation Framework



Semiotic and functional requirements for E-Publication : STM perspective

-  Innovation will not be generated by technological means but by functional requirements!
 -  Signification and document modelling in scientific electronic publication as well as discussion related to Open-Access up to now have basically been coined on the information model dominating the STM disciplines:
 -  **Research** -> '**Results**' -> 'Packaging' -> Publication
 -  Robust and not very complex 'container' modell
 -  Elektronik Publishing \approx Electrified Publishing (e-journals)
- => Open Access of networked print-analogous material is vital
- => Little need of innovation and thus low innovation potential



Semiotics of Electronic Publication: the humanities perspective

 Electronic publishing in the humanities and social sciences takes place in a substantially different information model:





- **(Research \Leftrightarrow discursive 'packaging') \Rightarrow Publication**
- Resulting in complex document models and publication formats heavily intertwined with core research operations
- Complex signifier \leftrightarrow significate relations as constituents.
- 'container' models are over-reductionist and inappropriate

\Rightarrow 'Open Access' to networked print-analogous material is **not** critical, access to publication source + processing methods are required

\Rightarrow substantial innovation can be expected from this sector once electronic publishing evolves into a serious substitute of traditional publishing means!



Conclusion: a few words on the context of 'technical' decisions

-  Control over content has little value without controlling the means to access, manipulate and use that content.
-  There are no 'innocent', purely technical decisions in scientific publishing and purely 'political' initiatives with no awareness of the implications of technical choices are naive, dangerous ... and common in the Open Access context.
-  Scientific communication needs continuity and can hardly cope with permanent shifts of technical paradigms that affect document models, formats and identifiers.
-  Purely commercial perspectives leading to proprietary choices can do a lot of harm in this respect and probably produce innovative approaches. This applies to Elsevier and Springer as well as to Adobe and Microsoft (to name just a few examples).

=> Open, standard based technology is the appropriate basis for innovation!

==> <http://www.gap-c.de> and OpenSPF (<http://www.openspf.de/>)

===> Thanks for your patience and attention!